FIG.1

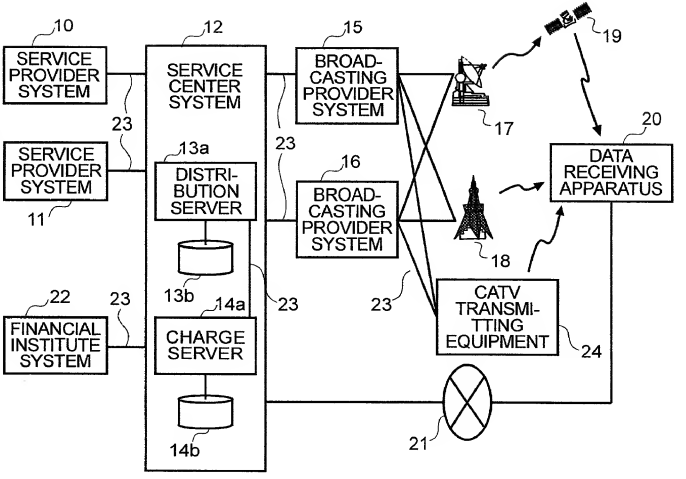

10
SERVICE PROVIDER SYSTEM
11
SERVICE PROVIDER SYSTEM
22
FINANCIAL INSTITUTE SYSTEM
23
23
23
12
SERVICE CENTER SYSTEM
13a
DISTRI-BUTION SERVER
13b
14a
CHARGE SERVER
14b
15
BROAD-CASTING PROVIDER SYSTEM
16
BROAD-CASTING PROVIDER SYSTEM
17
18
19
20
DATA RECEIVING APPARATUS
CATV TRANSMI-TTING EQUIPMENT
24
21

FIG.2

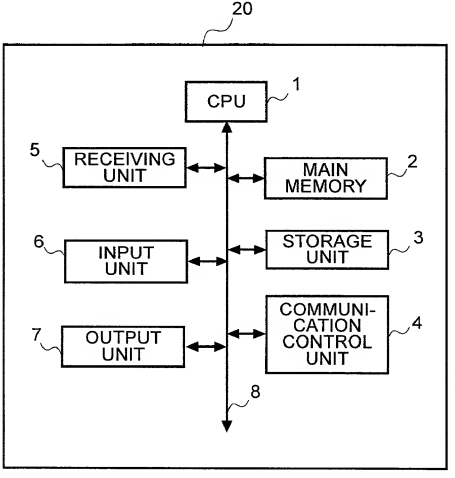

20
CPU
1
5
RECEIVING UNIT
MAIN MEMORY
2
6
INPUT UNIT
STORAGE UNIT
3
7
OUTPUT UNIT
COMMUNI-CATION CONTROL UNIT
4
8

FIG.3

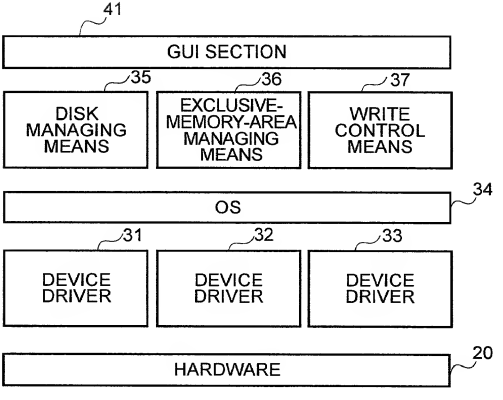

41
GUI SECTION
35
DISK MANAGING MEANS
36
EXCLUSIVE-MEMORY-AREA MANAGING MEANS
37
WRITE CONTROL MEANS
34
OS
31
DEVICE DRIVER
32
DEVICE DRIVER
33
DEVICE DRIVER
20
HARDWARE

FIG.4

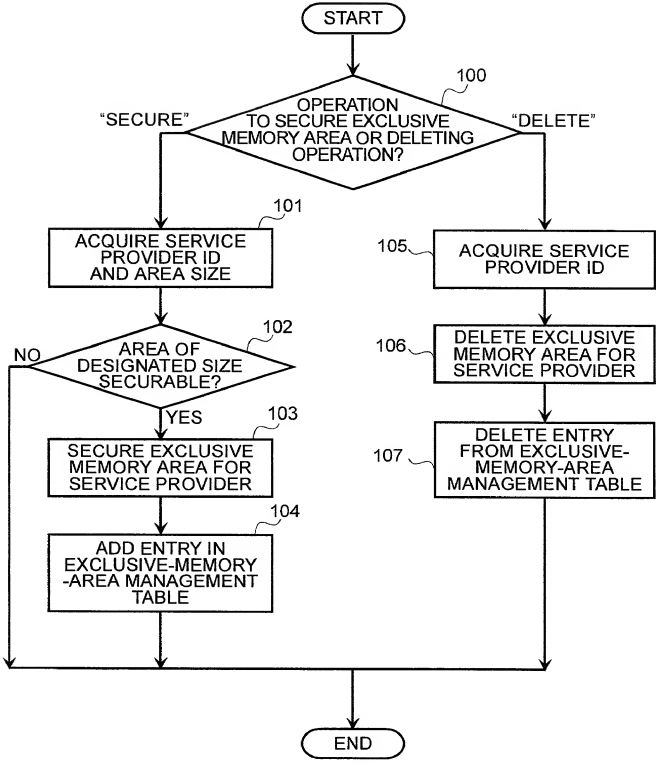

START
100
OPERATION TO SECURE EXCLUSIVE MEMORY AREA OR DELETING OPERATION?
"SECURE"
"DELETE"
101
ACQUIRE SERVICE PROVIDER ID AND AREA SIZE
102
AREA OF DESIGNATED SIZE SECURABLE?
NO
YES
103
SECURE EXCLUSIVE MEMORY AREA FOR SERVICE PROVIDER
104
ADD ENTRY IN EXCLUSIVE-MEMORY -AREA MANAGEMENT TABLE
105
ACQUIRE SERVICE PROVIDER ID
106
DELETE EXCLUSIVE MEMORY AREA FOR SERVICE PROVIDER
107
DELETE ENTRY FROM EXCLUSIVE-MEMORY-AREA MANAGEMENT TABLE
END

FIG.5

200 / 201 SERVICE PROVIDER ID	202 AREA SIZE	203 LOGIC DRIVE NAME	205 / 204 WRITE CONTROL FLAG	
			SERVICE PROVIDER	USER
-	2G (BYTES)	DISK 1	0	1
0015	1G (BYTE)	DISK 2	1	0

206

FIG.6

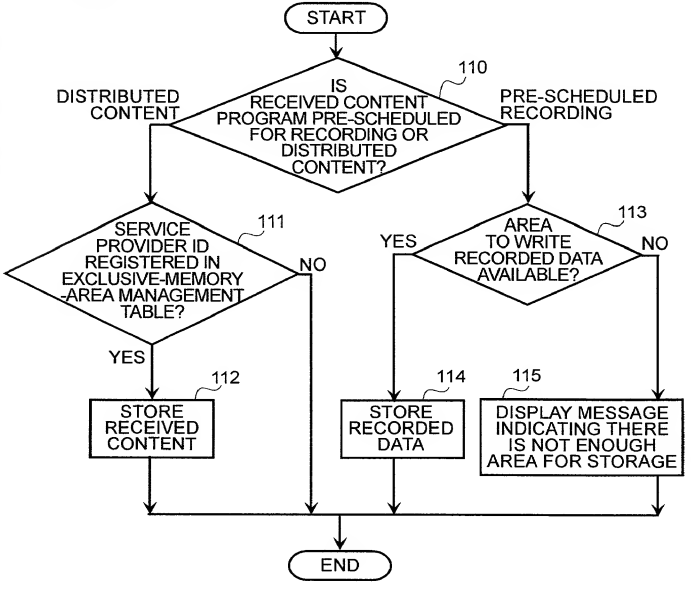
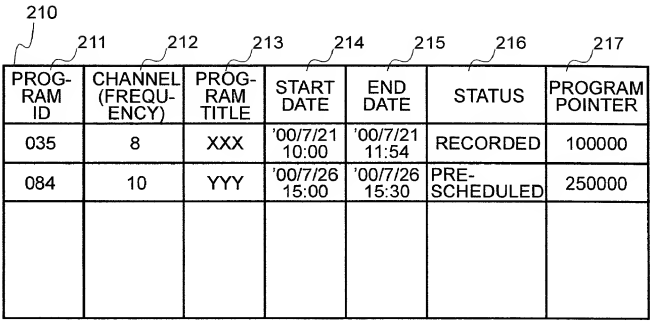
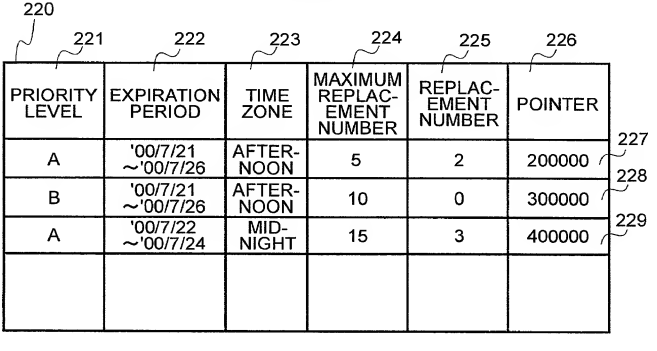


FIG.7



PROGRAM ID	CHANNEL (FREQUENCY)	PROGRAM TITLE	START DATE	END DATE	STATUS	PROGRAM POINTER
035	8	XXX	'00/7/21 10:00	'00/7/21 11:54	RECORDED	100000
084	10	YYY	'00/7/26 15:00	'00/7/26 15:30	PRE-SCHEDULED	250000

FIG.8



PRIORITY LEVEL	EXPIRATION PERIOD	TIME ZONE	MAXIMUM REPLACEMENT NUMBER	REPLACEMENT NUMBER	POINTER
A	'00/7/21 ~'00/7/26	AFTERNOON	5	2	200000
B	'00/7/21 ~'00/7/26	AFTERNOON	10	0	300000
A	'00/7/22 ~'00/7/24	MIDNIGHT	15	3	400000

FIG.9

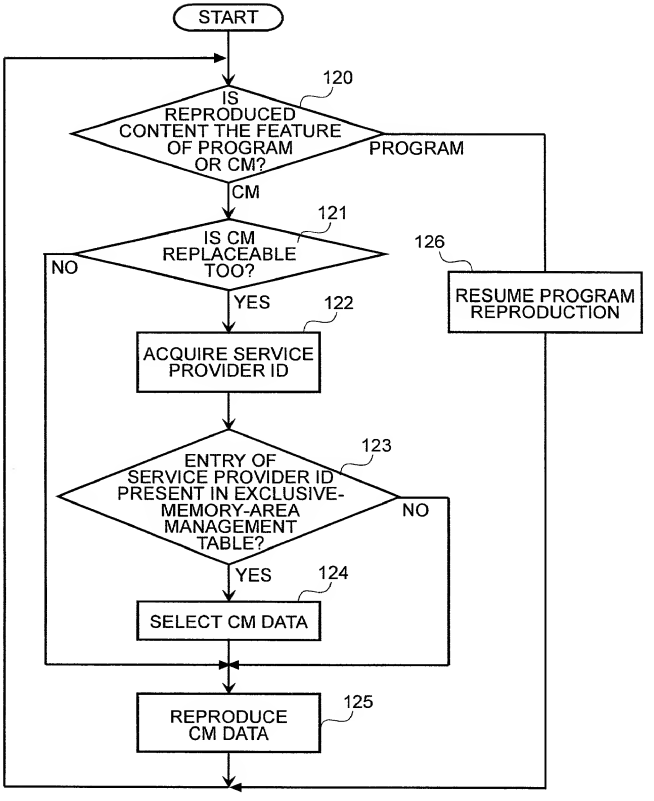

START
120
IS REPRODUCED CONTENT THE FEATURE OF PROGRAM OR CM?
PROGRAM
CM
121
IS CM REPLACEABLE TOO?
NO
126
RESUME PROGRAM REPRODUCTION
YES
122
ACQUIRE SERVICE PROVIDER ID
123
ENTRY OF SERVICE PROVIDER ID PRESENT IN EXCLUSIVE-MEMORY-AREA MANAGEMENT TABLE?
NO
YES
124
SELECT CM DATA
125
REPRODUCE CM DATA

FIG.10

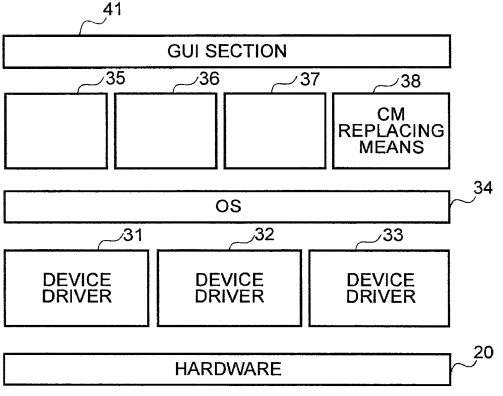

41
GUI SECTION
35
36
37
38
CM REPLACING MEANS
34
OS
31
32
33
DEVICE DRIVER
DEVICE DRIVER
DEVICE DRIVER
20
HARDWARE

FIG.11

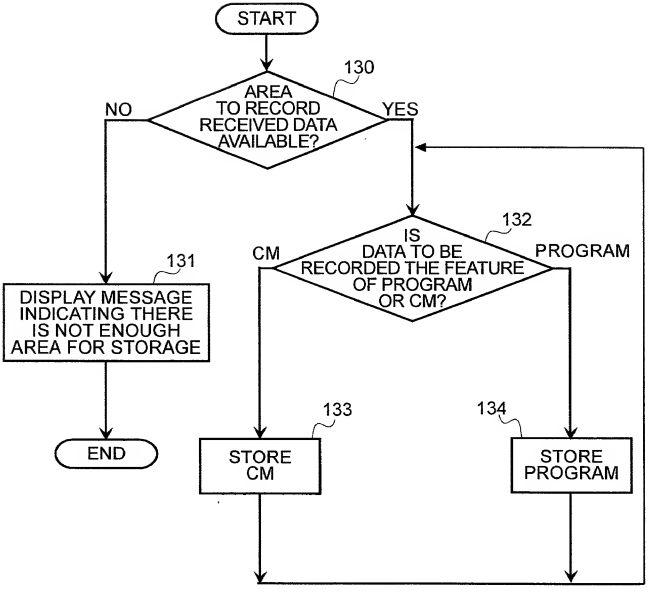

START
130
AREA TO RECORD RECEIVED DATA AVAILABLE?
NO
YES
131
DISPLAY MESSAGE INDICATING THERE IS NOT ENOUGH AREA FOR STORAGE
END
132
IS DATA TO BE RECORDED THE FEATURE OF PROGRAM OR CM?
CM
PROGRAM
133
STORE CM
134
STORE PROGRAM

FIG.12

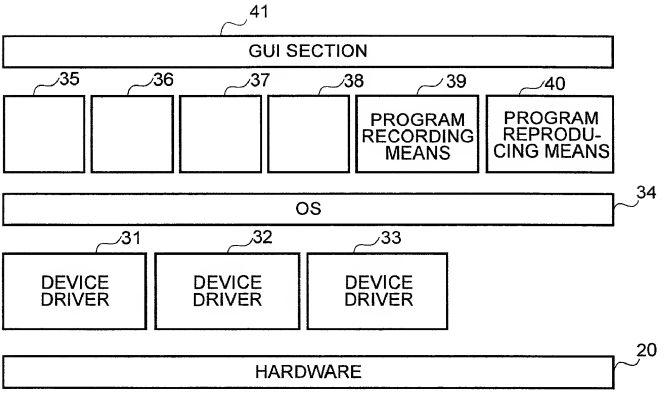


FIG.13

230

231 PROGRAM ID	232 CHANNEL (FREQUENCY)	233 PROGRAM TITLE	234 START DATE	235 END DATE	236 STATUS	237 PROGRAM POINTER	238 CM POINTER
035	8	XXX	'00/7/21 10:00	'00/7/21 11:54	RECORDED	100000	180000
084	10	YYY	'00/7/26 15:00	'00/7/26 15:30	PRE-SCHEDULED	250000	300000

FIG.14

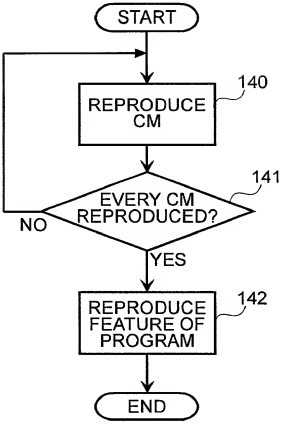


FIG.15

240

241 SERVICE PROVIDER ID	242 AREA SIZE	243 AVAILABLE AREA SIZE
0138	2G (BYTES)	127M (BYTES)
0015	1G (BYTE)	65M (BYTES)

FIG.16

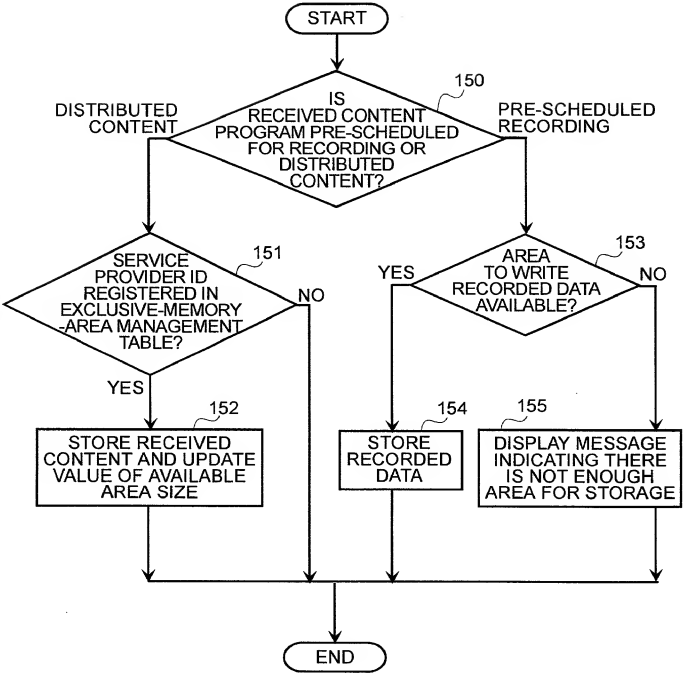

START
150
IS RECEIVED CONTENT PROGRAM PRE-SCHEDULED FOR RECORDING OR DISTRIBUTED CONTENT?
DISTRIBUTED CONTENT
PRE-SCHEDULED RECORDING
151
SERVICE PROVIDER ID REGISTERED IN EXCLUSIVE-MEMORY -AREA MANAGEMENT TABLE?
NO
YES
152
STORE RECEIVED CONTENT AND UPDATE VALUE OF AVAILABLE AREA SIZE
153
AREA TO WRITE RECORDED DATA AVAILABLE?
YES
NO
154
STORE RECORDED DATA
155
DISPLAY MESSAGE INDICATING THERE IS NOT ENOUGH AREA FOR STORAGE
END

FIG.17

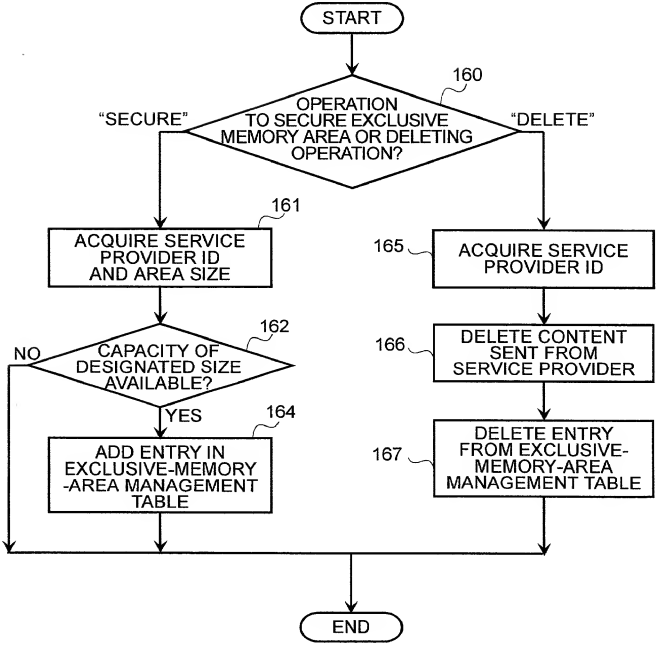

START
160
OPERATION TO SECURE EXCLUSIVE MEMORY AREA OR DELETING OPERATION?
"SECURE"
"DELETE"
161
ACQUIRE SERVICE PROVIDER ID AND AREA SIZE
162
CAPACITY OF DESIGNATED SIZE AVAILABLE?
NO
YES
164
ADD ENTRY IN EXCLUSIVE-MEMORY -AREA MANAGEMENT TABLE
165
ACQUIRE SERVICE PROVIDER ID
166
DELETE CONTENT SENT FROM SERVICE PROVIDER
167
DELETE ENTRY FROM EXCLUSIVE-MEMORY-AREA MANAGEMENT TABLE
END

FIG.18

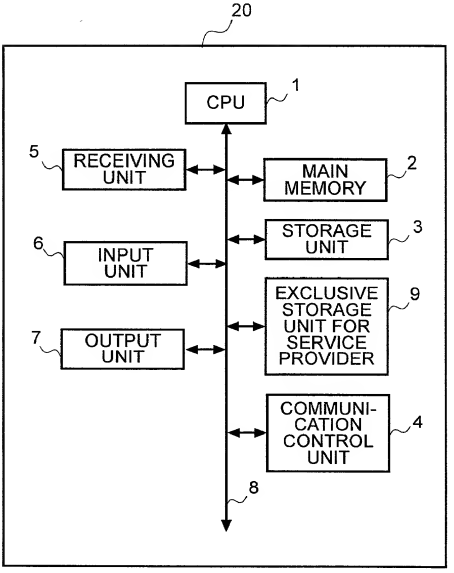

20
CPU
1
5
RECEIVING UNIT
MAIN MEMORY
2
STORAGE UNIT
3
6
INPUT UNIT
EXCLUSIVE STORAGE UNIT FOR SERVICE PROVIDER
9
7
OUTPUT UNIT
COMMUNI-CATION CONTROL UNIT
4
8

FIG.19

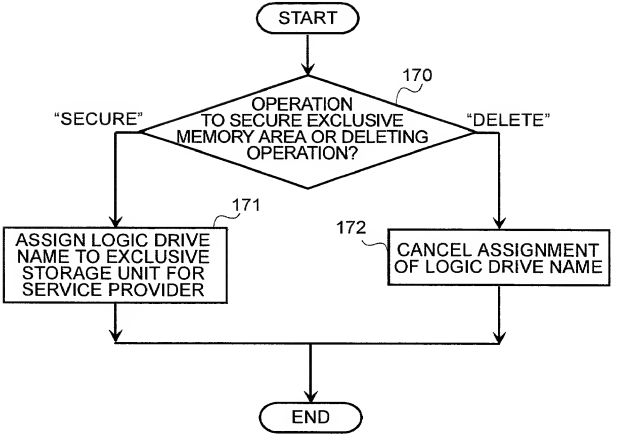

START
170
OPERATION TO SECURE EXCLUSIVE MEMORY AREA OR DELETING OPERATION?
"SECURE"
"DELETE"
171
ASSIGN LOGIC DRIVE NAME TO EXCLUSIVE STORAGE UNIT FOR SERVICE PROVIDER
172
CANCEL ASSIGNMENT OF LOGIC DRIVE NAME
END

FIG.20

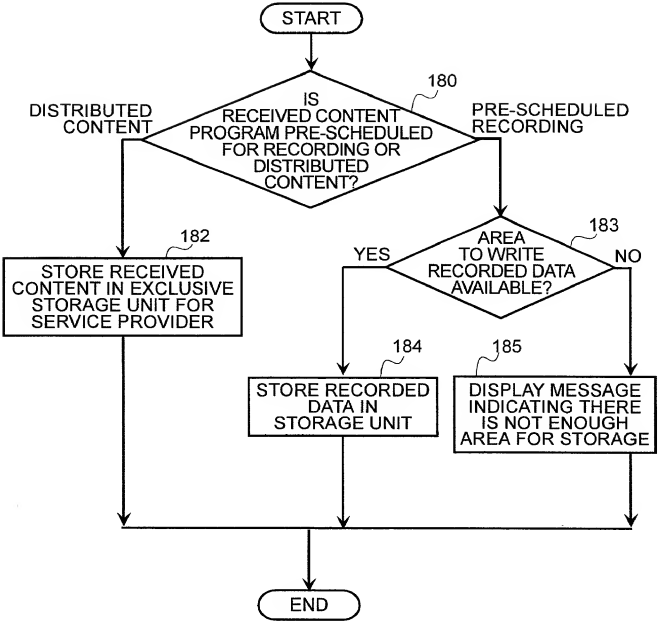

START
IS RECEIVED CONTENT PROGRAM PRE-SCHEDULED FOR RECORDING OR DISTRIBUTED CONTENT?
180
DISTRIBUTED CONTENT
PRE-SCHEDULED RECORDING
182
STORE RECEIVED CONTENT IN EXCLUSIVE STORAGE UNIT FOR SERVICE PROVIDER
AREA TO WRITE RECORDED DATA AVAILABLE?
183
YES
NO
184
STORE RECORDED DATA IN STORAGE UNIT
185
DISPLAY MESSAGE INDICATING THERE IS NOT ENOUGH AREA FOR STORAGE
END

FIG.21

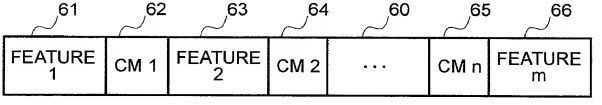

61
62
63
64
60
65
66
FEATURE 1
CM 1
FEATURE 2
CM 2
...
CM n
FEATURE m

FIG.22

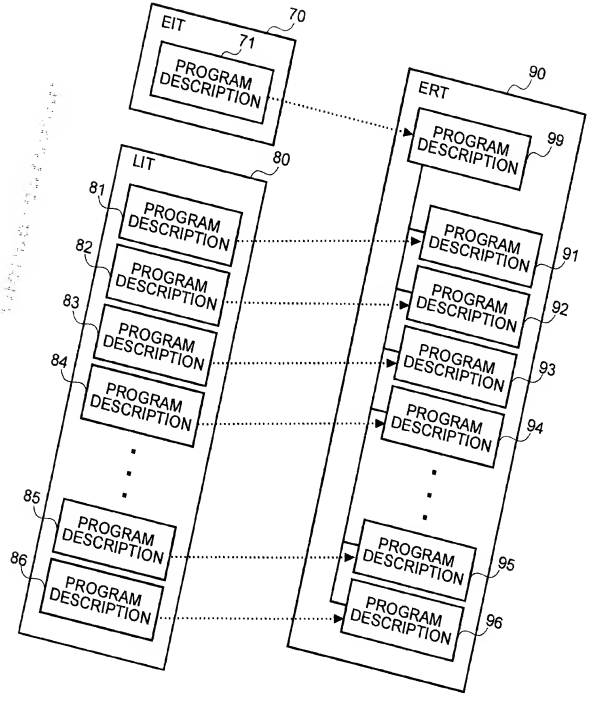

EIT
70
71
PROGRAM DESCRIPTION
LIT
80
81
82
83
84
85
86
PROGRAM DESCRIPTION
ERT
90
99
91
92
93
94
95
96

FIG.23

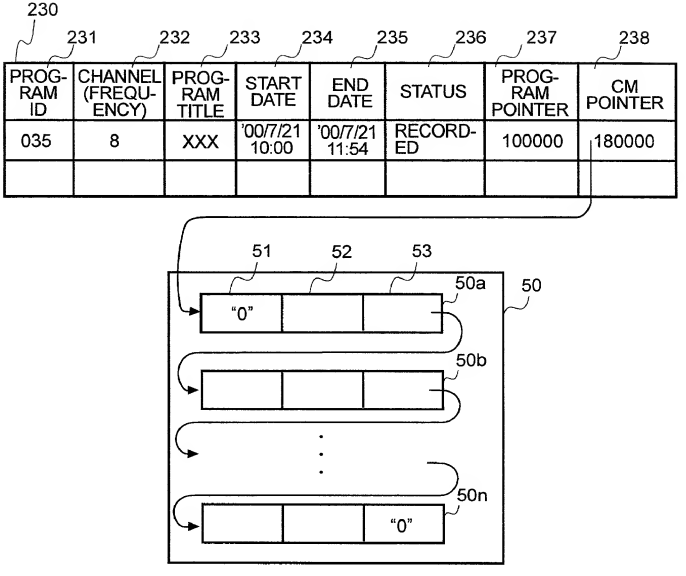

230
231
232
233
234
235
236
237
238
PROG-RAM ID
CHANNEL (FREQU-ENCY)
PROG-RAM TITLE
START DATE
END DATE
STATUS
PROG-RAM POINTER
CM POINTER
035
8
XXX
'00/7/21 10:00
'00/7/21 11:54
RECORD-ED
100000
180000
51
52
53
50a
50
"0"
50b
50n
"0"

FIG.24

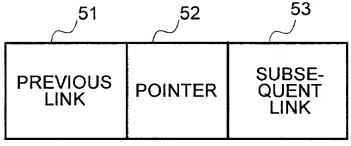

51
52
53
PREVIOUS LINK
POINTER
SUBSE-QUENT LINK

FIG.25

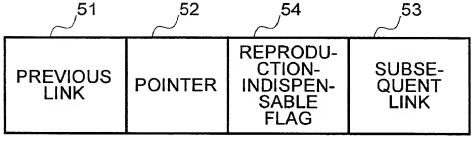

51
52
54
53
PREVIOUS LINK
POINTER
REPRODU-CTION-INDISPEN-SABLE FLAG
SUBSE-QUENT LINK

FIG.26

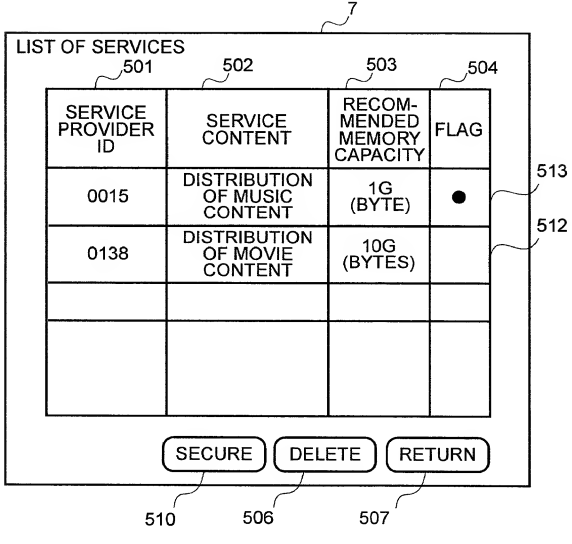

7
LIST OF SERVICES
501
502
503
504
SERVICE PROVIDER ID
SERVICE CONTENT
RECOM-MENDED MEMORY CAPACITY
FLAG
0015
DISTRIBUTION OF MUSIC CONTENT
1G (BYTE)
●
513
0138
DISTRIBUTION OF MOVIE CONTENT
10G (BYTES)
512
SECURE
DELETE
RETURN
510
506
507

FIG.27

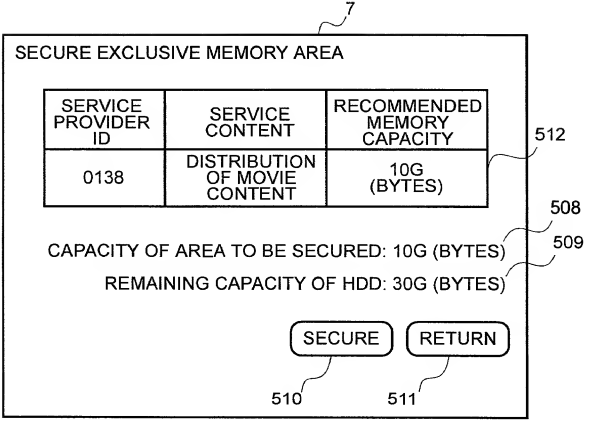

7
SECURE EXCLUSIVE MEMORY AREA
SERVICE PROVIDER ID
SERVICE CONTENT
RECOMMENDED MEMORY CAPACITY
0138
DISTRIBUTION OF MOVIE CONTENT
10G (BYTES)
512
508
CAPACITY OF AREA TO BE SECURED: 10G (BYTES)
509
REMAINING CAPACITY OF HDD: 30G (BYTES)
SECURE
RETURN
510
511

FIG.28

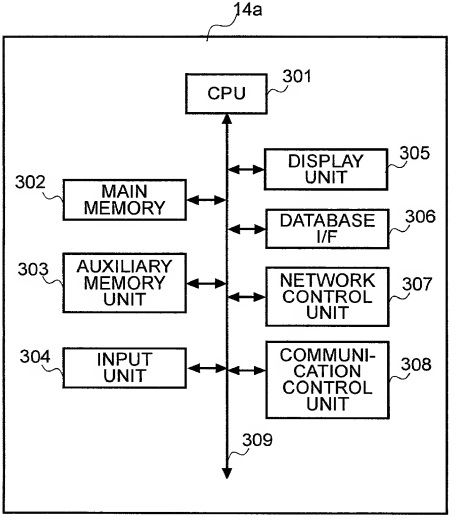

14a
CPU
301
DISPLAY UNIT
305
302
MAIN MEMORY
DATABASE I/F
306
303
AUXILIARY MEMORY UNIT
NETWORK CONTROL UNIT
307
304
INPUT UNIT
COMMUNI-CATION CONTROL UNIT
308
309

FIG.29

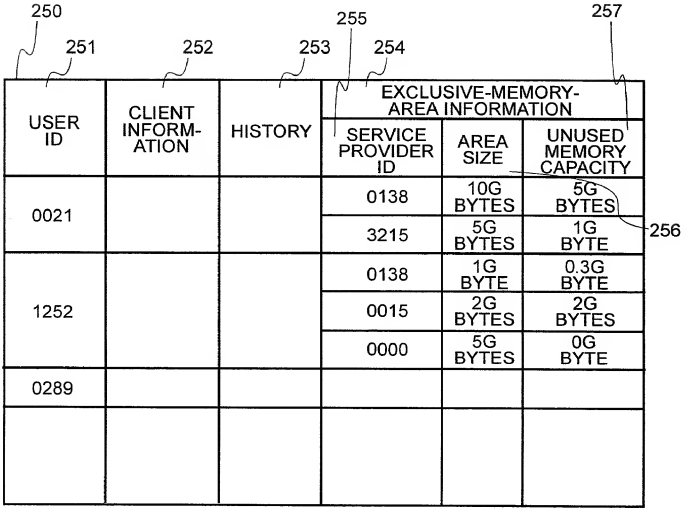

250
251
252
253
255
254
257
USER ID
CLIENT INFORM-ATION
HISTORY
EXCLUSIVE-MEMORY-AREA INFORMATION
SERVICE PROVIDER ID
AREA SIZE
UNUSED MEMORY CAPACITY
0021
0138
10G BYTES
5G BYTES
3215
5G BYTES
1G BYTE
256
1252
0138
1G BYTE
0.3G BYTE
0015
2G BYTES
2G BYTES
0000
5G BYTES
0G BYTE
0289

FIG.30

260

261 SERVICE PROVIDER ID	262 CONTENT ID	263 DECRYPTION KEY	264 CHARGE	265 REPRODUCTION CONDITION
0138	0025	AAA	¥100	TWO DAYS
		BBB	¥500	PERMANENT (BOUGHT)
	1475	XXX	¥200	TWO DAYS
		YYY	¥400	ONE WEEK
		ZZZ	¥1000	PERMANENT (BOUGHT)
0015				

FIG.31

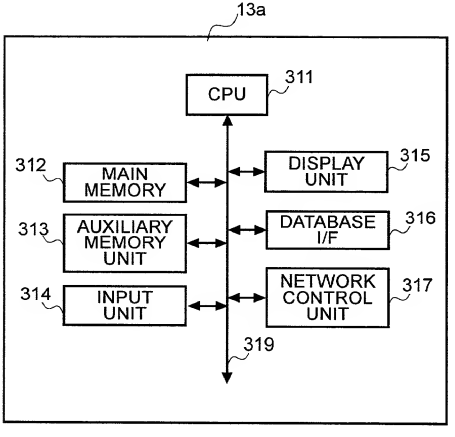

13a
CPU
311
312
MAIN MEMORY
313
AUXILIARY MEMORY UNIT
314
INPUT UNIT
DISPLAY UNIT
315
DATABASE I/F
316
NETWORK CONTROL UNIT
317
319

FIG.32

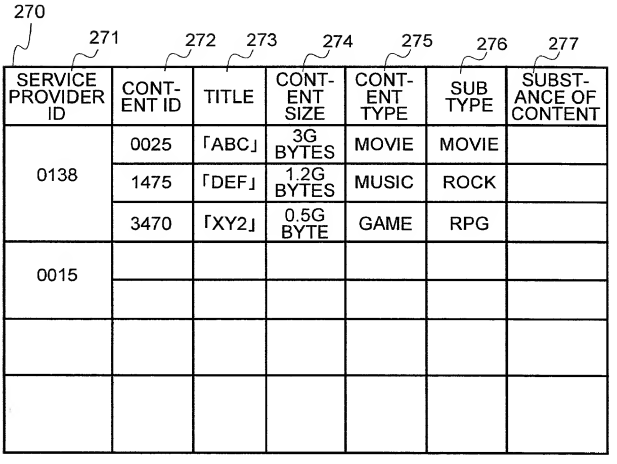

270
271
272
273
274
275
276
277
SERVICE PROVIDER ID
CONT-ENT ID
TITLE
CONT-ENT SIZE
CONT-ENT TYPE
SUB TYPE
SUBST-ANCE OF CONTENT
0138
0025
「ABC」
3G BYTES
MOVIE
MOVIE
1475
「DEF」
1.2G BYTES
MUSIC
ROCK
3470
「XY2」
0.5G BYTE
GAME
RPG
0015

FIG.33

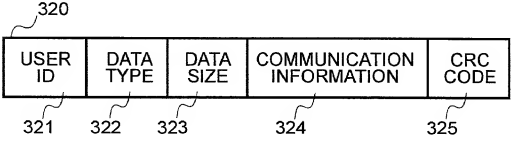

320
USER ID
DATA TYPE
DATA SIZE
COMMUNICATION INFORMATION
CRC CODE
321
322
323
324
325

FIG.34

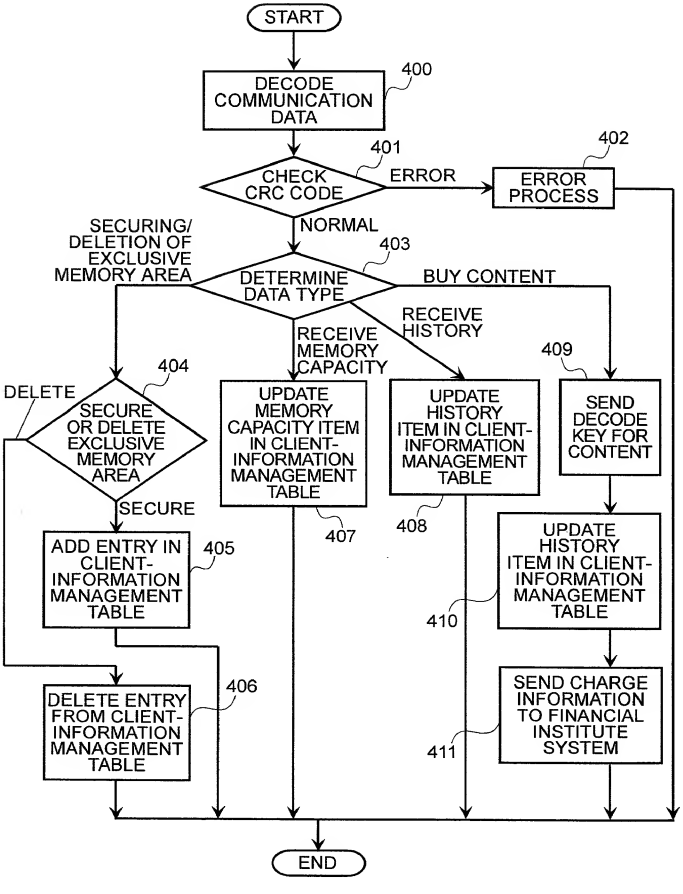
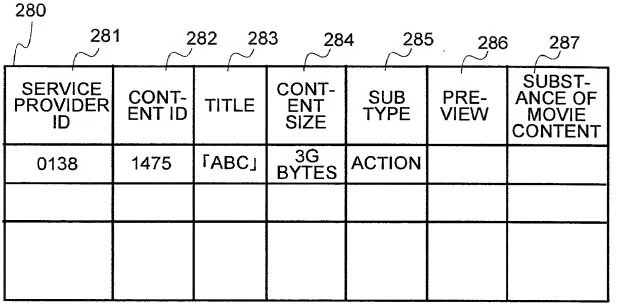
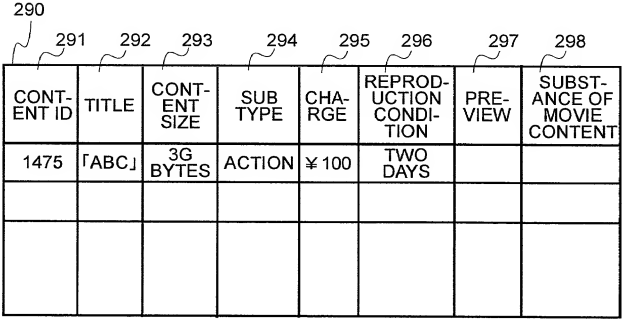

START
DECODE COMMUNICATION DATA
400
CHECK CRC CODE
401
ERROR
ERROR PROCESS
402
NORMAL
SECURING/ DELETION OF EXCLUSIVE MEMORY AREA
DETERMINE DATA TYPE
403
BUY CONTENT
RECEIVE HISTORY
RECEIVE MEMORY CAPACITY
409
DELETE
SECURE OR DELETE EXCLUSIVE MEMORY AREA
404
SECURE
UPDATE MEMORY CAPACITY ITEM IN CLIENT-INFORMATION MANAGEMENT TABLE
407
UPDATE HISTORY ITEM IN CLIENT-INFORMATION MANAGEMENT TABLE
408
SEND DECODE KEY FOR CONTENT
ADD ENTRY IN CLIENT-INFORMATION MANAGEMENT TABLE
405
UPDATE HISTORY ITEM IN CLIENT-INFORMATION MANAGEMENT TABLE
410
DELETE ENTRY FROM CLIENT-INFORMATION MANAGEMENT TABLE
406
SEND CHARGE INFORMATION TO FINANCIAL INSTITUTE SYSTEM
411
END

FIG.35



280	281	282	283	284	285	286	287
SERVICE PROVIDER ID	CONT-ENT ID	TITLE	CONT-ENT SIZE	SUB TYPE	PRE-VIEW	SUBST-ANCE OF MOVIE CONTENT	
0138	1475	「ABC」	3G BYTES	ACTION			

FIG.36



290	291	292	293	294	295	296	297	298
CONT-ENT ID	TITLE	CONT-ENT SIZE	SUB TYPE	CHA-RGE	REPROD-UCTION CONDI-TION	PRE-VIEW	SUBST-ANCE OF MOVIE CONTENT	
1475	「ABC」	3G BYTES	ACTION	¥100	TWO DAYS			

FIG.37

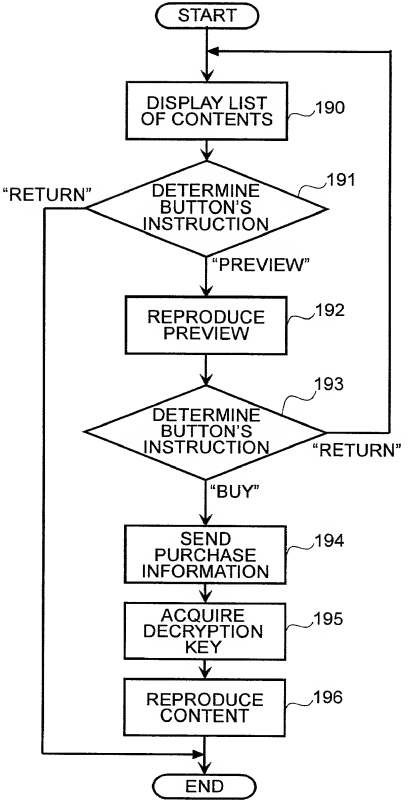

START
DISPLAY LIST OF CONTENTS
190
DETERMINE BUTTON'S INSTRUCTION
191
"RETURN"
"PREVIEW"
REPRODUCE PREVIEW
192
DETERMINE BUTTON'S INSTRUCTION
193
"RETURN"
"BUY"
SEND PURCHASE INFORMATION
194
ACQUIRE DECRYPTION KEY
195
REPRODUCE CONTENT
196
END

FIG.38

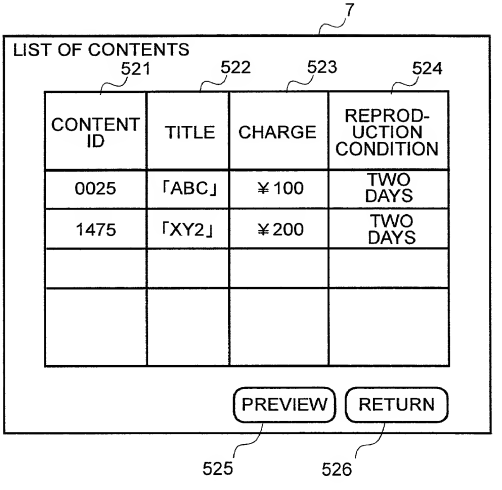
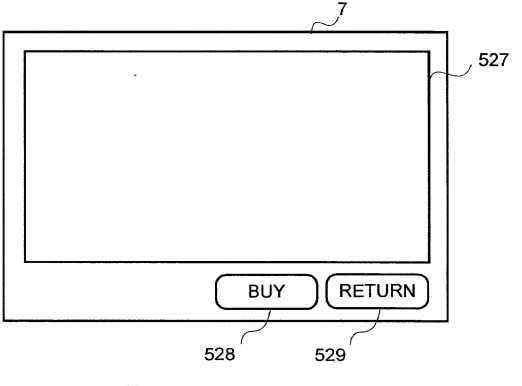

7
LIST OF CONTENTS
521
522
523
524
CONTENT ID
TITLE
CHARGE
REPROD-UCTION CONDITION
0025
「ABC」
￥100
TWO DAYS
1475
「XY2」
￥200
TWO DAYS
PREVIEW
RETURN
525
526

FIG.39


7
527
BUY
RETURN
528
529